THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—Liebig.

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For the Farmers' Cabinet.

The Potatoe Rot.

Mr. Editor,—Any information on the subject of the rot in the potatoe, that even approximates to the truth, is much needed at present. I hope you will not consider a column of your paper unworthily filled which contains a communication devoted to that object.

I stated in your May number, that the rot in the potatoe was caused by a deficiency of alkaline substances. It is found by burning the tops of the potatoe, that 10,000 parts yield 1,500 parts of ashes, while oak wood in equal quantity, yields only 250 parts. This will serve to show the great quantity of alkali contained in potatoes over other vegetable matter.

The cellular tissue of all vegetables is composed partly of alkalies. They exist therein in a variety of forms: sometimes as carbonate of lime, at others as silicate of potash, at others in the form of phosphate of lime, &c., &c.

It is plain that if a plant has not sufficient alkali for the formation of the cellular tissue, its growth will be impeded, or the cellular substance will be so weak and thin, as not to be able to perform its function of holding the starch and other matter contained in the potatoe. When the plant has not enough alkali therefore, we may look for the cellular tissue to be broken and otherwise injured. This is actually the case with the potatoe that is affected with the rot. Mr. Teschemacher, a scientific gentleman of Boston, who has examined the rotten potatoe with a microscope, says: "The cells appeared lacerated." This is what we would expect, especially when the substance contained in the cells is swollen by wet, or heat, and the tissue is thin. In another place he says: "Indeed, it appears to me that the injury takes place by the rupturing of the cellular parts of the potatoe."

When the cells are ruptured the health of the potatoe is destroyed, and death and decay follow in the parts so ruptured. The decayed matter gives food to fungi and insects, and thus gives rise to the theory that the disease is caused by the fungi or insects, instead of the want of alkali.

Again, when there is sufficient alkali to neutralize an acid, the acid is not to be found as such. It has entered into a chemical combination with the alkali, and assists in forming a salt. There is carbonic acid

in a rotten potatoe, which is evidence that there is not alkali enough to operate upon it. If an alkali is placed upon some of the rotten potatoe, it instantly changes. Mr. Teschemacher says in his letter to the New England Farmer, dated Boston, October, 1844,* while speaking about his experiments, "A portion of the dark substance was placed upon a piece of glass on the microscope stand, in a drop of distilled water, and then thoroughly examined. A little salt on the fine point of a penknife, was then added. A nearly instantaneous change took place. The dark coloured masses separated; much of them seemed to pass away; and instead, there appeared numerous dark slate coloured globular bodies, which I easily recognized as the spores or reproducing bodies of the fungus. With the grey, slimy substance, the effect was still more striking. All the indistinct slime disappeared; the mass became clear and transparent, and left nothing but these innumerable dark globules floating about in the drop of water."

Salt is well known to be a muriate of soda. It appears evident from Mr. Teschemacher's experiment, that the soda of the salt left the muriatic acid and entered into combination with the carbonic acid of the rotten mass, forming a carbonate of soda, and setting the muriatic acid free.

This carbonic acid is highly infectious, and hence the reason that a potatoe slightly rotten soon becomes wholly so, and infects those with which it is in contact. Any alkali will neutralize it, forming with it a carbonate. Consequently any alkali will cure the rot in the potatoe. This it will effect in two ways. First, by strengthening the cellular tissue—thus preventing the rupturing and consequent disorganization of the potatoe, which would result in death and decay; and secondly, by neutralizing the carbonic acid, and thus destroying its infectious principle.

But let us leave off philosophizing, and turn to *facts*—a mode of operating adopted by persons who are too lazy to reason, or who cannot or will not. I will take some extracts from numerous articles on the subject contained in the Report of the Commissioner of Patents. I could take more, but perhaps these will be sufficient, and more would only fill up your paper to no purpose. The first instance I shall notice is one that came under the direct notice of the Commissioner of Patents, and is thus related: "Mr. James Camack planted with potatoe cuttings three separate pieces of land—two of which were sand and gravelly loam—all on the 20th of June, 1844. Those on the first piece were rolled in plaster of Paris or gypsum, and sprinkled in the hill with the same before being covered; another piece was prepared with compost and stable manure; and a third covered with horse dung. In this experiment the first alone escaped the disease and gave an excellent crop; the second was not quite so bad as the last, but both were comparatively useless. The soil for the first two pieces was exactly alike—in one field."

In the same article I find the following: "An instance is related where on planting, a table-spoonful of lime was placed in each hill; and after the potatoes were up, there was applied about a gill of a mixture—of lime two bushels, plaster three, and ashes eight. In this case there was not one rotten potatoe in the fall, while in the fields of his neighbours they were much diseased."

Mr. S. F. Perley, a correspondent of the Massachusetts Ploughman, under date of October, 1844, says among other things, "The rot has prevailed most in ground most highly dressed with barn manure, especially if placed in the hill. When potatoes were planted without any manure, they have rotted very little. Two pieces on similar ground—rather wet—were manured, the one from the barn, the other with hair, lime, fleshings, &c., from the tannery, both applied in the hill: the first rotted badly, the other very little. Two pieces, the first dressed broadcast and in the hill, from the barn; the other broadcast, with a compost of barn manure and swamp muck—muck and ashes and clear manure, both dry—the first was planted early, the latter late; the first rotted in the field, and being dug in the hot weeks of September, rotted after being put into the cellar; while the latter, dug at odd jobs from the middle of September to the middle of October, suffered very little. This piece had plaster put on at the time of planting and after the potatoes were up."

Mr. Netterville, a correspondent of the Boston Cultivator, writing from Palatine Bridge, Montgomery county, New York, gives the information before mentioned, of the advantage to be derived from a mixture of ashes, lime and plaster.

At a meeting of the New York Farmers' Club, Mr. Butler says, "I found that both potatoes and corn grow soft and unhealthy when manured with the ordinary barn-yard manure, but that they grow uniformly dry and mealy, with lime-prepared manure."

At the same meeting Dr. Gardener stated that "Many diseased potatoes have been

* See current vol. of Farmers' Cabinet, p. 179.

brought from Germany for seed, to the United States. Mr. Anderson has tried lime broadcast; his crop is good."

In a communication addressed to the Farmers' Club, just mentioned, Mr. Butler says, "We are informed by Mr. Blakesley, that lime in the hill has been tried upon old land, and the crop proved to be much rotted. In this instance,—as I have been personally informed by Mr. B., the lime was put immediately upon the seed potatoe. In the presence of caustic lime, plants will to a certain degree, be deprived of one of their main constituents—oxygen. Had perfectly mild lime been used, the result would have been far different. By the president we are informed that lime, together with manure, had been spread upon a garden the previous year; the garden was then tilled, and this last season planted with potatoes. The crop proved good."

Mr. Walton, of St. Andrews, N. B., says, "I notice complaints made about the *rot* in potatoes. I was troubled with it for many years, and having found a remedy, give it for the benefit of others. The rot in potatoes in this section, commenced about ten years ago. One-third of a crop was frequently lost by it; and often in the spring, hundreds of bushels have been thrown from the cellars quite useless. For some years past I have used slaked lime, which I sprinkle upon the potatoes as soon as they are cut for seed, and shovel them over in it, and plant them immediately. Since I have adopted this plan, I have not lost a potatoe, either in the ground or after they were put in the cellar, and such of my neighbours as follow my example are alike fortunate, and in no way troubled with the rot."

In a report of a discussion in Glasgow, Scotland, where the rot in the potatoe prevails as extensively as it does in this country, the following paragraph occurs: "Mr. Anderson, from the north of Ireland, as appears from his statement, has been most successful in his efforts to avoid failures; and the means he adopted, viz; liming the ground, planting only in drained land, pulverizing the soil well, and not leaving either the manure or seed exposed to the effects of the sun and wind—are based on said practical knowledge."

In a communication from Ulster county, New York, dated December 18th, 1844, by R. L. Pell, and addressed to the Hon. H. L. Ellsworth, Commissioner of Patents, I find the following account of experiments: "In the year 1843, I planted a field of several acres in drills, harrowed the ground level, and top-dressed it with 200 bushels of oyster shell lime and charcoal dust to the acre. The yield was 432 bushels per acre. At the same time the potatoes throughout the country were more or less decayed; likewise a parcel of the same seed planted contiguous to the above, not limed, were also decayed.

"This year, 1844, I planted the same seed in the following manner: the ground was thrown into drills, and manured heavily with barn-yard manure. The potatoes were cut into single eyes, fourteen days before required for planting, and covered with plaster. Limed a few for the sake of experiments specified. They were sprinkled with small white and almost imperceptible insects, and were consequently rejected. Those limed were free. I planted them in the drills on the manure, nine inches apart, tops, centres and ends separately, to mark the difference in growth, which was not very great.

"The first three drills—300 feet in length—were covered with dry charcoal dust; the second with oyster-shell lime; the third with bone-dust; the fourth with poudrette; the fifth with unleached ashes; the sixth with new mown grass and plaster; the seventh with fine salt; the eighth with silicate of potash, the ninth with guano. And so on throughout the field, each alternate three drills with a different substance, except six drills, in which the same seed was planted without any other composition, than the barn-yard manure; and adjoining them, six drills planted with superior French potatoes, received three weeks before directly from Havre.

"*Cultivation.*—When they were four inches above ground, the earth was ploughed from them. After an interval of six days, it was ploughed to them again; the field being in perfect order, required no other attention during the season. On the 3rd of October they were ploughed out, and proved to be perfectly sound, with the exception of the twelve drills of pink-eyed kidneys and French potatoes, without composition, which were entirely rotten. Six hundred bushels were pitted immediately, and not examined before the 5th of December, when they were found to be perfectly sound."

It is well known that poudrette, bone-dust, silicate of potash and guano, contain one or more of the alkalies. I am disposed to think, Mr. Editor, that the above extracts prove conclusively the theory, that the rot in the potatoe is caused by a want of the alkalies. At any rate, I should strongly recommend their use. They can do no harm,

unless abundantly used, and they may do an immense amount of good.

Yours, &c., Chemico.

Honesdale, Pa., June 6th, 1845.

The foregoing we consider a valuable communication. Partly in corroboration of some of the views expressed, the editor recollects that in the use of lime on his farm, there was no crop, unless perhaps it was the oat crop, on which that material had so uniformly a beneficial effect, as that of potatoes. The hints may be easily made use of, and at little expense.—Ed.

The Hessian Fly.

Observations communicated at the request of the Hon. H. L. Ellsworth, by E. C. Herrick, Librarian of Yale College, Connecticut.

The insect commonly called the *Hessian fly*, which has for so many years ravaged the wheat fields of our country, appears to have been wholly unknown here before the American revolution. It is usually stated that the insect was first noticed in the year 1776 or 1779, on Staten Island and the westerly end of Long Island, and was generally supposed to have been introduced among straw brought hither by the Hessian troops in the service of Great Britain. The ravages of the insect soon attracted general attention; and as early as the year 1788, serious apprehensions were excited in England that the destroyer might be conveyed thither in some cargo of wheat. The alarm there was so great, that the government took up the matter; "the privy council sat day after day, anxiously debating what measures should be adopted to ward off the danger of a calamity more to be dreaded, as they well knew, than the plague or pestilence; expresses were sent off in all directions to the officers of the customs at the outports, respecting the examination of cargoes; despatches written to the ambassadors in France, Austria, Prussia, and America, to gain that information, of the want of which they were now so sensible; and so important was the business deemed, that the minutes of the council, and the documents collated from it, fill upwards of 200 octavo pages." Kirby and Spence. On the 25th of June of that year, an order in council was issued, prohibiting the entrance into Great Britain, of wheat raised in any of the territories of the United States; intending, by this measure, to keep out the much dreaded enemy. Soon after the arrival of the news of this order, the supreme executive council of Pennsylvania addressed a letter of inquiry to the "Philadelphia Society for promoting Agriculture," which promptly replied that the plant of the wheat alone was injured, and that the insect was not propagated by sowing the grain which grew on fields infected with it. The prohibition was doubtless based on the erroneous representation of Sir Joseph Banks and Dr. Blagden, which they continued to enforce even after they were better instructed by Dr. Currie. It is sufficiently remarkable, that, although the wheat was prohibited an "entry," it was allowed to be stored; so that the Hessian fly, if concealed among the grain, would, after all, have had a good opportunity to escape into the country. In eight or ten months, the government bought the imprisoned wheat at prime cost, kiln-dried it, and resold it at great loss, and almost immediately took off the prohition. *Memoir of Currie.*

In the course of a few years after this, the Hessian fly was found in every part of our country where wheat was cultivated. From the period of the revolution down to the present time, no insect in the land has received so much public attention, or has called out so many scores of pages of observation and speculation. These are to be found scattered through magazines, agricultural journals, and common newspapers. But, in defiance of them all, the Hessian fly continues its destructive work, and is probably, as little under the actual control of man as it was half a century ago.

Whether this insect was an original inhabitant of this country, or was imported by the Hessian soldiers, is a question not yet settled. At the time of the discussion which led to the prohibitory order, an extensive inquiry in Europe resulted in the conclusion that the insect was wholly unknown there. Yet, in the year 1834, it was found existing in several places in Southern Europe, and injuring the wheat in the same manner as in this country. This important discovery was made by my friend, Mr. James D. Dana, who had previously been engaged with me in the examination of the Hessian fly, and was well qualified to decide upon the case. American Journal of Sciences, xli, 153. Moreover, we have an account from the vicinity of Geneva, in Switzerland, reported by Duhamel, of an insect destroying the wheat there as long since as 1732, in the manner of the Hessian fly; and an account, in 1823, by Raddi, of what is probably the same insect, in various places in Italy. No traces have been detected of any insect of the habits of the Hessian fly, in our country, earlier than the year 1776; and if this insect is a native of North America, what plant sustained it before wheat, rye, and barley were imported? On the other hand, we have no proof that the Hessian fly has

ever been found in Germany; and it is certain that, if the wheat were reaped in the ordinary manner, nearly all the available insects would be left in the stubble; and, further, the straw alleged to have been brought by the Hessians, must have been that which ripened in the summer of 1775, and from which most of the insects which it contained would have escaped before August, 1776. On a question of such uncertainty, no one need quarrel with another's opinion.

The first scientific description of the Hessian fly was published in the Journal of the Academy of Natural Sciences of Philadelphia, for July, 1817, No. 3. i. 45, by the late distinguished entomologist, Thomas Say. He there gives it the systematic name of the *cecidomyia destructor;* and to his description adds a few remarks relative to its habits, and furnishes, also, an account of another insect, by which the fly is often destroyed. Without going into a minute and tedious technical description, the following account is offered as probably sufficient to enable an observer to identify the insect in its various transformations: the Hessian fly is a two-winged insect, with head, eyes, and thorax black; the head is small and depressed; the palpi, or mouth feelers, are three or four jointed—the basal one being the smallest; the antennæ are about half as long as the body, and consist each of 14 to 17 oval joints, besides the basal joint, which appears double; the wings are large, hairy, rounded at the tip, and have each two or three longitudinal nervures; the abdomen is of a tawny red, and furnished, irregularly, with many black hairs; consists of seven rings or segments, besides the ovipositor, which is of two sides, and of a rose-red colour; the ovipositor, when extended to the utmost, is about one-third as long as the abdomen; length of the body, from the front of the head to the end of the abdomen, about one-eighth of an inch; the legs are long and slender, pale red, and covered sparsely with dark hair. The male is equal in size to the female, but generally less black, with antennæ somewhat longer, and about three-fourths the length of the body. The joints of the antennæ are globular, and slightly separated from each other. Several other species of the genus *cecidomyia*, or one closely allied to it, are common in this region. But the Hessian fly is the largest and darkest of our species with which I am acquainted.

The eggs are laid in the long creases or furrows of the upper surface of the leaves,—*i. e.*, the blade or strap-shaped part—of the young wheat plant.

While depositing her eggs, the insect stands with her head towards the point or extremity of the leaf, and at various distances between the point and where the leaf joins and surrounds the stalk. The number found on a single leaf varies from a single egg up to thirty, or even more. The egg is about a fiftieth of an inch long, cylindrical, rounded at the ends, glossy and translucent, of a pale red colour, becoming in a few hours, irregularly spotted with deeper red. Between its exclusion and its hatching, these red spots are continually changing in number, size, and position; and sometimes nearly all disappear. A little while before hatching, two lateral rows of opaque white spots, about ten in number, can be seen in each egg. In four days, more or less, according to the weather, the egg is hatched; the little wrinkled maggot, or larva, creeps out of the delicate membranous egg-skin, crawls down the leaf, enters the sheath, and proceeds along the stalk, usually as far as the next joint below. Here it fastens, lengthwise and head downwards, to the tender stalk, and lives upon the sap. It does not gnaw the stalk, nor does it enter the central cavity thereof; but, as the larva increases in size, it gradually becomes imbedded in the substance of the stalk. After taking its station the larva moves no more, gradually loses its reddish colour and wrinkled appearance, becomes plump and torpid, is at first semi-translucent, and then more and more clouded with internal white spots; and, when near maturity, the middle of the intestinal parts is of a greenish colour. In five or six weeks—varying with the season—the larva begins to turn brown, and soon becomes of a bright chesnut colour. In that state, the insect bears some resemblance to a flax-seed; and many observers speak of this as the *flax-seed* state. The larva has now become a chrysalis, or pupa, and takes no more food. The pupa within gradually cleaves off from the outer skin, and, in the course of two or three weeks, is entirely detached from it, so that the skin of the larva—now brown and hardened, and of a sort of leathery texture—has become a case or shell for the pupa inside. The *pupa shell* is, of course, in size and form, like the larva: it is oval, bulging out beneath, and of the same curve above as the outside of the stalk; divided by cross lines into twelve segments, and is about an eighth of an inch long. Within this shell the pupa gradually advances towards the winged state; it contracts in length, but not in breadth; and its skin appears covered with minute elevations. Just before evolution, we find the pupa invested in a delicate

membrane, or scarf,—which, not long previous, was its outer skin—through which many parts of the future fly may be distinctly seen. Finally, this scarf splits along the thorax, or back, and the insect comes forth, both from this and the pupa shell, a perfect two-winged fly.

This is, in brief, the history of an individual which has been so fortunate as to escape all the numerous enemies with which its race is surrounded from the moment the egg is deposited; but of these more hereafter.

In the northern and middle States, at least, winter wheat is sown in September or October. Soon after the plants have appeared above ground, the Hessian fly begins to lay her eggs upon them; and this operation is continued during several weeks, according to the season. The eggs laid on the green leaves are in a few days hatched, and the young larvæ crawl down the stalk, and take their stations; generally clustering around the stalk at the nearest joint below. Here, by sucking the plant, they increase in size, become full and hard, and pressing deeply into the stalk, they impair its growth; and if their number about one joint is large, the stalk is killed. Frequently the plant, although impoverished, advances far enough to head out; but when the grain begins to fill, its own weight, or perhaps the wind, causes the stalk to break down. The injury done to the wheat is occasioned by the exhaustion of the sap, and by the pressure on the yielding stalk.

In five or six weeks the larvæ stop feeding, the outer skin turns brown, and within this brown and leathery case the pupæ pass the winter—generally a little below the surface of the earth. In April and May the fly is again found depositing her eggs on the same wheat,—viz: that from grain sown the preceding autumn,—and also on the spring wheat which has just come up. These eggs hatch, and the larvæ therefrom operate in the same manner as those of the autumn previous. These larvæ become pupæ about the middle of June. The flies which lay their eggs in the spring are probably in part from the pupæ which became such late in the preceding autumn, and partly from pupæ contained in stubble left the preceding summer. The period of the existence of the Hessian fly in the pupæ or flax-seed state is exceedingly variable. After much observation my own opinion is, that in general, pupæ which become such late in the autumn, evolve the winged insect partly during the next spring, and partly in the summer and autumn following. Those pupæ which become such about June, evolve the winged insect partly during the next autumn and partly during the year succeeding.

The Hessian fly is attacked by numerous foes, which, in various stages of its existence, destroy a large part of every generation. Whether it has, in its winged state, any enemies, except the ordinary destroyers of flies, I know not. The eggs, while lying on the leaves of the young plant, are visited by a very minute four-winged insect,—a species of platygaster—which lays in them its own eggs. From later observation it appears that occasionally, as many as five or six eggs of this parasite are laid in a single egg of the Hessian fly. The latter egg hatches and becomes a pupa, as usual; but from the pupa case, instead of the Hessian fly, issues one or more of these minute parasites.

The pupæ, while imbedded in the stalk, are attacked by at least *three* different minute parasites,—four-winged hymenoptera—which, boring through the sheath of the stalk, deposite their eggs in the body within; and the latter is finally devoured by the parasite larvæ. These are the principal means by which the multiplication of the Hessian fly is restrained within tolerable limits.

Although the loss annually sustained by the wheat growers of this country, in consequence of the ravages of the Hessian fly, is severe, yet it is well nigh impossible to ascertain even its probable amount. As long since as 1800, Dr. S. L. Mitchell, of New York, affirmed that the "insect is more formidable to us than would be an army of twenty thousand Hessians." In 1804, President Dwight, of Yale college, remarked that "this insect is feeble and helpless in the extreme, defenceless against the least enemy, and crushed by the most delicate touch; yet, for many years, it has taxed this country, annually, more, perhaps, than a million of dollars." At the present day, the amount of the injury inflicted probably far exceeds what it was forty years since; and to discover some feasible mode of exterminating the insect, or at least of arresting its ravages, is an object of great importance to this country.

Various remedial measures have, from time to time, been proposed; most of which I will here state.

1st. Steeping the seed-wheat in elder juice, solution of nitre, boiling water, or other liquids; or rolling in lime, ashes, or some other substance, in order to kill the eggs. But as the eggs of the Hessian fly are not on the seed, they will never be hurt by such processes. So far as these means give vigor to the plant, they may be of some little service.

2nd. Sowing seed obtained from places in which the insect has not made its appearance—American Museum iv. 47. This recommendation also assumes the error, that the eggs are laid on the grain, and will be found, as it has often proved, useless as respects this insect.

3rd. Abstaining rigidly throughout the whole grain growing region of North America from planting wheat, rye, barley, or oats, for one, two, or three years, and thus to starve out the insect! This plan might be effectual, but would obviously involve some inconveniences.

4th. Manuring the land very highly, so that the plants will grow vigorously, and be sooner out of the way of the insect, and also better able to resist it. This proposal has some merit, but does nothing towards destroying the insect.

5th. Sowing some variety of bearded wheat, flint wheat, &c., supposed to have a harder and more solid stalk than common wheat, and better able to withstand the impression of the larvæ. A suggestion of some value, but, equally with the 4th, leaves the insect unharmed.

6th. Fumigating the wheat field, and sprinkling the young wheat with infusion of elder and with other steeps. If successful, which is quite uncertain, it is plain that these measures are impracticable on a large scale.

7th. Sowing winter wheat very late in the autumn, so that the fly shall have mostly disappeared before the plants are large enough to be attacked. No doubt this plan is to some extent useful, but the wheat sown late is in great danger of perishing during the winter. The fly will of course attack it in the spring, yet one attack will do less damage than two.

8th. Sowing oats early in autumn on the intended wheat field. It is supposed the fly will lay its eggs on the plant; then let them be ploughed in, and the wheat sown. The fly having nearly exhausted itself on the oats, the wheat will suffer less. This plan may possibly be of some partial utility.

9th. Drawing a heavy roller over the young wheat both in autumn and spring. This process must be useful in crushing many eggs and larvæ.

10th. Permitting sheep and other animals to graze the wheat fields while the insects are laying their eggs. By these means, large numbers of the eggs will be devoured with the leaves.

11th. Burning the stubble immediately after harvest, and ploughing in the remains. This is by far the most practicable and effectual mode of exterminating the insect, or, at least, of checking its increase. In the stubble are many pupæ of the fly, at this time completely in our power; if, in reaping, the stubble is left high, the fire would sweep rapidly over a field and destroy nearly all these pupæ, the few which escaped the fire, would, by the plough, be buried so deep as to perish in the earth; mere ploughing in of the stubble must be highly useful. If the two recommendations last named were thoroughly put in practice over the whole country—not only upon wheat, but also on rye and barley, and any other plants attacked by the Hessian fly—the ravages of this insect would, in all probability, ere long, become scarcely worthy of notice.

It may not be improper, in this place, to state that the foregoing account of the habits of the Hessian fly is derived from my own long continued observations, and that I have moreover endeavoured to consult all the papers of any importance which have been published on the subject.

There are in the United States, besides the Hessian fly, several other insects which attack the wheat while in the field. Those persons who assert that the former lays its eggs on the grain in the spike or head, have undoubtedly mistaken for the Hessian fly some one of these other insects. The following brief notices of the more important of these enemies, I have abridged from the accounts comprised in Dr. T. W. Harris's "Treatise on some of the insects of New England, which are injurious to vegetation;" (Camb. 1842: 459 pages, 8 vo.,) a work of great interest and value.

In it the inquirer will find a faithful digest of all the reliable information we have on the numerous insects which injure our plants, fruits, and trees; and, in addition, he will learn the means of defence, so far as any have been discovered. The book ought to be in the hands of every intelligent farmer and orchardist.

1. A grain moth (Angoumois moth—*alucita cerealella*, Oliv.) probably the same as described by Colonel Carter, in the Transactions of the American Philosophical Society, volume i, 1771; and by J. Lorain, in Mease's Archives of Useful Knowledge, vol. ii, 1842. It is about three-eighths of an inch long when its wings are shut. The upper wings are of a light brown satin colour and lustre, covering the body horizontally above, but drooping a little at the sides. The lower wings and the rest of the body are ash-coloured. The moth lays her eggs usually on the young and tender grain in the field; each caterpillar from these eggs selects a single grain, burrows into it, and

remains concealed, devouring the meal within. Subjecting the grain to a heat of 165° Fahr., for twelve hours in an oven, will kill the insect.

2. The English wheat fly (*tipula tritici*, Kirby,) is a small orange-coloured two-winged gnat, which lays its eggs in the head of wheat while blossoming. The maggots from these eggs are without feet, tapering towards the head, at first perfectly transparent and colourless, but soon becoming orange-yellow; and when mature, are each about an eighth of an inch long. It is supposed they devour the pollen, and prevent the setting of the grain, the maggots fall from the spike to the earth, within which they undergo their final transformations. This insect—or one very similar to it—has done much damage in the northern States and in Canada for several years past; but no effectual mode of preventing the mischief, or of destroying the insect, appears to have been devised.

3. The wheat caterpillar.—This is a span worm of brownish colour, with twelve feet—six near each end of the body. It feeds on the kernel in the milky state, and also devours the germinating end of the ripened grain. It is said to be found in the chaff when the grain is threshed. We have little certain knowledge concerning the parent insect or its transformations.

In addition to these three, there are probably other insects more or less injurious to our wheat crops. Much has been published in our journals relative to these depredators; yet their habits are imperfectly understood, and many of the accounts are confused and contradictory. It is greatly to be desired that all who have the opportunity should endeavour to make careful observations, and communicate them to the public.

These observations must be accompanied by accurate descriptions of the insect under examination and in its various stages; otherwise, most of the labour will be spent in vain.—*Ellsworth's Report for* 1844.

Accidents to Indian Corn.

Messrs. Editors,—I have not the arrogance to suppose that any wisdom of mine will be greatly valuable to your agricultural readers; but as I feel a lively interest in their pursuits, and as the physiology of vegetation is with me a favourite study, I will, with your permission, suggest two or three hints in relation to the culture of *Indian corn*, hoping they may be of some practical benefit.

In the flowers of all plants—unless the ferns, mosses, and similar forms of vegetation, be exceptions—the organs that perform the principal office in reproduction, are the *stamens* and *pistils*, the former being barren, the latter, in favourable circumstances, fertile. In many plants, as the radish, the potatoe, the clover, these different organs are located in the same individual flower or floret. There is another race, in which the staminate and pistillate organs are on the same plant, but are in separate groups by themselves. The cucumber and the mulberry are specimens of this class, and so are most of our forest trees. Here also belongs the Indian corn. There is a third class in which the barren or staminate flowers are on one individual plant, and the fertile or pistillate flowers on another. The hemp and poplar are well known examples.

In each of these three classes there is upon the stamens a dust which botanists call the *pollen;* and though most kinds of vegetation may be propagated from the root, and many from layers or cuttings, like the mulberry, the seed or germ of the new plant cannot be produced unless this dust is scattered upon the pistil. Hence, by the way, as only the staminate tree of the Lombardy poplar has been introduced into this country, it has never been reproduced from the seed. Its propagation has been effected only by means of layers or roots; and this is the reason, I have little doubt, that this species of the poplar, which, when first introduced into the country, was a beautiful tree, and commanded a most extravagant price, has now so far deteriorated as to be entirely worthless.

In the Indian corn the staminate flowers are those arranged in a semi-conical form at the top of the plant. Every one who has passed through a corn-field in the flowering season, must have observed a profusion of dust from these stamens. The fibrous, silk-like appendages at the end of the ear, the base of each of which is enclosed by the husks, are the pistils. These threads lead along the rows, and *each one is connected with some embryo kernel of corn.* Now in order to the impregnation, formation, and growth of these kernels, it is necessary that the fructifying dust from the flower above fall upon these filaments projecting from the end of the ear. But this is not all. It is supposed to be indispensable to the formation of each kernel, that the filament leading to it should receive a portion of the pollen. Experiments have been made, which to my mind clearly prove this fact. When I remove the silk entirely from the ear before the plant is in flower, there will not be a kernel produced. You will observe a sort of receptable for the seed, but the ear, for all practicable purposes, is destroyed. The

same is true, when instead of removing these filaments we girdle the end of the ear tightly with a cord, though the dust is allowed to come in contact with the pistils. So if before the dust from the stamens begins to fall, one of these threads be destroyed, the particular receptacle or germ to which it led, is not impregnated, and no kernel will be formed there.

Of these facts it is believed many intelligent and judicious farmers are ignorant. When a boy, I used often in the flowering season of corn to amuse myself by gathering the silk, sometimes in considerable quantities from the newly formed ear, without the least suspicion of the injury I was doing; and I have since seen the farmers themselves, as they were passing through their corn-field, pulling off these delicate fibres, as carelessly as they would remove a fungus or a moss from a tree. It is mainly to suggest a word of caution to the farmer generally, and his more thoughtless children especially, that these facts, in themselves it is hoped, not entirely destitute of interest, are communicated.—*Farmer and Mechanic.*

A Simple Green-house—Tulips—Parks of London.

The editor of Hovey's Magazine of Horticulture,—a highly valuable periodical published at Boston, and which should be in the hands of every gardener and florist,—says in his notes and recollections of a tour through part of England, Scotland and France, in the autumn of 1844, that he "noticed at the nursery establishment of Mr. Glendenning, at Chiswick, a mode of making pits or frames, which answers a good purpose. It is simply to cut and pare sods of the width of six inches; these are carefully and firmly piled up, the grass side downwards, to the proper height, making allowance for settling, and when they become dry the sashes are put on, and the whole is completed; in our climate, on the approach of cold weather, they could be banked up, and would be much better for many things than ordinary wood frames, which are expensive and more likely to suffer from cold. We would recommend a trial of this plan. In Philadelphia, among the nurserymen, great quantities of plants are wintered in ordinary frames, and valuable room is saved in the green-house; besides, plants kept in a low temperature, especially roses, azaleas, camellias, &c., start with more vigor, and often make a stronger growth, than those kept in the green-house. To protect half hardy shrubs and plants, which will not stand the open winter, pits, such as we have noticed, will be found useful in the smallest collection of plants. Many plants, which are now only seen in green-houses, may be taken up in the autumn and planted again in the spring; and by such yearly removals, they soon acquire so large a mass of fibrous roots that they do not suffer in the least, and flower as freely as if they had not been taken up; in this way, azaleas, kalmias, rhododendrons, magnolias, ericas, &c., &c., may be managed with entire success."

He also says, "Mr. Groom, of Clapham, has long been well known for his splendid collections of tulips, ranunculuses, &c. He was formerly located at Walworth; but the land becoming valuable, he removed to his present place a few years since, and his grounds here are yet but partially under cultivation. The situation is on the Clapham road, about four or five miles from St. Paul's, and convenient from the omnibuses, which run directly by, many times a day.

"Mr. Groom's principal trade has been in tulips and other florist's flowers, but within a few years he has turned his attention to the production of the newer and more choice green-house plants, and at the present time he had a good collection."

"Preparations were making for planting out the great collection of tulips in October. For this flower Mr. Groom is famous; he has raised several very splendid seedlings, some of which are priced as high as *five hundred* dollars, and a great number at *one hundred* dollars each,—£21 sterling. It would seem to those who know little of the tulip that this was something of a tulip mania; but the tulip is a most gorgeous flower, and when once a love for it takes possession of the amateur, and he obtains a knowledge of its properties, there is scarcely any thing he would not sacrifice to obtain the choicest kinds. In England, there are many collections valued at thousands of pounds. In this country the tulip is but little valued, and a bed of the most common kinds attracts nearly as many admirers as one of the choicest and high-priced flowers. It is gratifying, however, to see the dawn of a better taste, and within a few years, especially in the vicinity of Boston, some very fine collections have been obtained, and the present season we anticipate a better display than has ever before been seen."

"Many individuals are not aware of the immense extent of the parks of London. St. James's, Hyde Park, Green Park, Regent's Park and Kensington Gardens, contain upwards of 1200 acres. In each of them are lakes or ponds of water, oftentimes crossed by handsome bridges. Each of the

parks has been judiciously planted with trees, and there are many splendid specimens of lindens, oaks, elms, &c. Kensington Gardens have been recently greatly improved by the removal of a brick wall about ten feet high, and the erection of an ornamental iron paling. The effect of this can at once be imagined; the long line of splendid dwellings, which border on the Bayswater road, now command a view of the Park, while before they looked against a solid wall. In certain parts of the Park, the public are allowed to drive, and, in the gay season, immense numbers of elegant carriages may be seen rolling through these sylvan places, where as much of the country is enjoyed in the heart of London as may be found within ten miles of many of our cities or large towns. How long will it be before this false idea of crowding buildings together, even in the country, will be abandoned? it is no uncommon occurrence to see gentlemen remove to the country, and take a house with less than *one quarter* of an acre of land, —but little better, indeed, than the crowded streets of the city."

"The root pruned pear trees were the next objects of attention; and, as Mr. Rivers has written so much on this subject, and reduced the system to practice, we anticipated much satisfaction from an inspection of them in bearing; but the exceedingly dry season had been quite too severe for the trees, and but a few were in fruit. The trees were from three to five feet high, well branched, and but for the drought would have presented a fine appearance. The trees are set about five feet apart, and by means of liquid manure or guano, they are induced to ripen a large crop.

"Mr. River's general stock of ornamental trees is large, and contains many new things, the results of his travels among the continental nurserymen. A great number of oaks are included in his collection, and we noticed the new Lucombe in great abundance. A weeping variety, called pubéscens péndula, was very beautiful, particularly for a lawn, where it shows with good effect. All the weeping trees are now much sought after for planting as single specimens. Among the ornamental shrubs we noticed a purple leaved variety of the berberry, which, with the copper beech, the purple oak, and the purple-leaved nut, are acquisitions to every collection of shrubs or ornamental trees; their dark and singular foliage contrasting prettily with other trees.

"Mr. Rivers cultivates great quantities of seedling trees and shrubs, as well as pines, spruces, larches, &c., &c., and we saw numerous beds of them in full growth. In the houses we saw fine plants of the weeping Thùja, T. filiformis, and also Cèdrus *Deodàra*. Thùja filiformis, if it should prove hardy in our climate, will be a highly beautiful evergreen; its long slender trailing stems, reaching quite on to the ground."

For the Farmers' Cabinet.

Ploughing in September for Corn.

To the Editor,—In this county the heart worm and the wire worm have made great destruction in the corn for the last ten years. I have accidentally found out a remedy that has succeeded twice in preventing the worm from destroying the young corn. In September, 1842, I ploughed a part of a clover sod for wheat, but the great drought prevented my finishing the field, so that I concluded to put the clover sod field in corn in the spring of 1843—the part ploughed in September, 1842, escaped the ravages of the worm, while the land alongside, ploughed in the spring of 1843, was nearly all taken by the worm; this induced me to try again, which I did in the month of September, 1843, with the same success as before stated. To plough in November or December, will not, as I believe, be of any use whatever as a preventive against the worm. I have known a field part ploughed in September—part in December, and the residue in March following, with the following results: The first escaped the ravages of the worm, the second and last were both destroyed in greater or less degree—all in the same field. Now it is worth a fair trial; and if September ploughing will prevent the destroyer, it will save the farmer much trouble and loss: it has succeeded in three instances to my knowledge; the reason of which I leave for others better qualified to ascertain—the facts are worth attending to, as it may save many bushels of corn to the farmer.*

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* The foregoing observations remind the editor of a fact which occurred some eight or ten years ago. He ploughed about one third of a field of fourteen acres for corn very late in the autumn; the plough was then stopped by the frost, but the weather being remarkably mild for a few days in the second month, the plough was again started, and some four or five acres more were ploughed, when the cold weather again suspended operations. The remainder of the lot was not finished till the latter part of the fourth month, just before planting time. One half the field was limed with 35 bushels to the acre—the other half had no manure. The *cut-worm* was exceedingly troublesome all over the field. There was no perceptible difference in its ravages, either where the ground had been ploughed at different periods, or where the lime had, or had not been applied. The corn was replanted, and replanted,

The Mediterranean wheat has succeeded the best with me for the last few years. I would recommend July or August plowing—wheat to be sowed by the first of September, pure clean seed in all cases, of the best quality, fully ripe before cutting for seed. Cheat and cockle will grow if sowed, if none is sowed little will be reaped; none after your land is clear of such filth.

The loss farmers sustain in consequence of the filth sowed in wheat is enormous. Many contend "wheat will turn to cheat;" this may be so, yet I do not believe it—as well might corn turn to cheat, or oats to wheat. It is a law of nature "that like will produce like;" every thing contains its seed within itself. If it was not so where would we be; and what interminable confusion would such changes produce? I say sow clean seed, and no other; at all times of the best quality, and you will soon have your land clear of cheat, cockle and many other injurious seeds that are a pest to the country, and which ought to become extinct. But they never will, unless you teach farmers their true interests. The way to wealth is as plain as the way to the corn field, if we only exercise common sense, and use intelligent industry aright. Our country is unequalled; though prices are low, large good crops make up for them! The farmers ought to take your paper,* generally, and learn that their true interests consist in a well informed and well governed community. Yours, &c.,

HENRY CAZIER.

New Castle Co., Del., June 4th, 1845.

Indian Corn.

"THE colours of Indian corn depend on that of the epidermis, or hull, or of the oil; the latter, when yellow, showing its colour through a transparent epidermis, while, if the hull is coloured and opaque, the grain presents the same colour. It appears that the superiority of one kind of corn, as the Baden and Canada, over another, as the Tuscarora, is surprisingly manifest; one is filled with oil, the other has no trace of it, hence the superiority of the former, and the yellow of most kinds, for fattening animals. People of weak digestion should not eat the meal of the yellow kind, containing so much oil, because it is more difficult to digest. The yellow colour of the Golden Sioux, an eight rowed corn, is due to the colour of the oil. Brown corn has a darker colour, dependent on the *combined* colours of the oil and epidermis. Red and blue corn owe their lively hues to the colours of the epidermis, and not to the oil. In the Rhode Island White Flint, —a favourite corn in that State—the oil is transparent and colourless, and the epidermis is likewise free from colour, and is nearly transparent; hence the meal is white, and the quantity of oil being large, it is less liable to ferment, and become sour, than some other varieties, as the Tuscarora, and is in very good repute."

We extract the above from Dr. Jackson's communication on analysis of grains, published in the Commissioner of Patents' Report. We have corrected it in one particular, where he speaks of the Golden Sioux being a twelve rowed corn, whereas it is only eight; it is the Dutton that is twelve rowed. There is an explanation of the cause of some corn popping, which probably is known to very few. "The oil in the horny portions of the grain is contained in little six-sided cells, in the form of minute drops, visible in a thin section, under a good microscope. When a grain of corn is heated to a temperature sufficient to decompose the oil, a sudden explosion takes place, and every cell is ruptured by the expansion of gaseous matters arising from the decomposition of the oil, and the grain is ruptured at the weakest point in the arch, and is completely evoluted and folded back. Now, on examining the cells again, they will be found lacerated, and swollen much out of shape. If an attempt is made to pop Tuscarora corn, it will be found never to succeed; hence, the curious phenomenon, so familiar to every child, though seldom, if ever, understood by its parents, is to be attributed entirely to the decomposition of oil, and the formation of carburetted hydrogen gas, such as is sometimes used in lighting large cities." It seems by this that the most popping corn contains the most oil, therefore what is called pop corn, or that corn which pops the most, must be, according to this statement, the best for fattening animals. Mr. Ellsworth says: "The culture of the grape for the table is increasing, and promises to be a

till it seemed useless to do it more. Late in the Fifth month the ground was marked out between the rows, and again planted as if it had not been previously done, under the apprehension that the former plantings were so thoroughly cut down that they would produce little or nothing. The old rows however were left to take their chance—they subsequently took a start, and the double set of rows produced one of the heaviest crops of corn we ever raised.—ED.

* We shall not be suspected of dissenting from this opinion of our correspondent. In endorsing it however, as we do most heartily and thoroughly, an expression may be given to the wish that every farmer in Delaware would show his acquiescence in it, by forwarding his name as a subscriber to the Farmers' Cabinet. He can hardly lay out a dollar better.—ED.

source not merely of pleasant luxury, but in many parts of our country of very considerable profit." In this neighbourhood, Cincinnati, and on the Kentucky side of the river, both natives and Germans are planting the vine in very considerable numbers, and we doubt not that we shall see good wine, equalling in flavor, and generally excelling in richness the medium choice wines of Germany.—*Western Farmer and Gardener.*

The Romance of Insect Life.

We take the following beautiful extract from an Historical Lecture by Judge Charlton, of Georgia:

"The earth teems with mysteries—the sky shines with them—they float in the air—they swim in the deep—they flash from the dark robed clouds—they whisper in the gentle tones of the summer wind—they speak in trumpet tongues, in the voice of the tempest and the thunder. Cease thy longings for the ancient days, oh, dreamer! Close thy book and look about thee upon the volume of Nature. See there, before thee, is a tiny insect that thou canst scarce distinguish from the grains of sand that surround it—watch it—it moves on with an energy and an instinct that enable it to overcome or avoid all obstacles. See—it has seized some object larger than itself, and still it goes bravely on—nothing daunts it—nothing stops it—tread it under foot,—if thou canst have the heart to attempt such a murder—and it will rise up again beneath the ocean of sand and turn once more to its labour. Dost thou know it? It is the ant, that lion-hearted ant, toiling amid the heat of summer; and though the season's brightness and its warmth are bringing up and producing ten thousand enjoyments for the little traveller, he is busy gathering together his provender for the long winter time, when frost and snow and cold shall have locked up the granaries of nature.

"Thou wilt tell me that I am mocking thee; that thou canst see this daily and hourly; and is this a mystery therefore? If thou hadst read in those ancient legends before thee, of an insect so courageous, that it would attack an animal of ten thousand times its magnitude; of industry so indefatigable, that it would climb house-tops and mountains to pursue its course; of perseverance so unflagging, that though repulsed a thousand times, it would still return and overcome the obstacle that impeded it—thy eyes would have sparkled with interest and amazement; it is because it is constantly before thee—because it belongs to the present time—that thou lookest so disdainfully upon it. When did the Knight Errants of thy heart do half so much? When did their bosoms beat as high with valor and determination as this poor insect? 'But it has no loves—no burning jealousies—no blood-stained victories!' How knowest thou that! I warrant thee, even that tiny breast has grown gentler for some fond one that lived within its little world; that its blood has flowed quicker when some Adonis ant has flirted around the little coquette; that its path has been stained by the trophies of its mimic battles.

"But thou wilt say why dost thou lure me from my glowing page, to point me to this moving atom? Why not show me the majestic mysteries of nature? Why waste my time with a topic so insignificant? I answer because it *is* insignificant. I point thee there to one of the smallest of earth's creatures, to ask thee if the atoms contain such wonders, how much more the noble and lofty works of Nature? Follow me, if thou wilt. Let us dive into the caverns of the earth, and mark the sculptured halls—the rocky avenues stretching miles and miles below the busy haunts of men. Let us plunge into the deep, and see the huge leviathan sporting amid the waters; or, the rainbow-hued dolphin, as she flings back bright rays of the glorious sun. Let us climb into the air, and behold the eagle with his untiring wing, and his unflinching eye, the noble image of indomitable perseverance and of brilliant genius, soaring proudly and gazing fixedly toward Heaven's brightest luminary! Oh, dreamer! if the moments of thy life were multiplied by the sands of the desert, they would be all too short to unravel these mysteries that are around thee and above thee."

Russian Mode of Making Butter.

I have for several years had the entire care of the milk department in my father's family. I therefore read, with great interest, whatever related to making butter and cheese, and I found much that was different from what I had been in the habit of practicing. One case of this kind was, directions for making butter in winter, according to what is called the Russian method, by which it was said butter could be made in winter as sweet, and with as little churning, as in summer. So I set about trying the experiment, and the result exceeded my expectations. My new practice is as follows:

Before I go out to milk, I put a kettle, say one-third full of water, and large enough to let the milk pail into it, on to the stove,

where it will get boiling hot by the time I have come in with the milk. I then strain the milk into another vessel, and wash the pail,—which should always be of tin—then pour the milk back into the pail, and set into the kettle of boiling water till the milk becomes scalding hot, taking care not to let it boil, then pour it into crocks or pans, and set it in the cellar for the cream to rise in the usual way. As little time should be occupied in this heating process as possible: hence the advantage of having the water ready hot when the milk is brought in.

Cream procured in this way, will seldom require more than twenty minutes churning, while by the common practice, the poor dairy-maid may have to churn for hours, and then, perhaps, have to throw it away, as I did myself on two occasions, before I happened to gain this valuable piece of information.—*Ohio Cultivator.*

For the Farmers' Cabinet.

Disease of the Potatoe.

Mr. Editor.—In your last number I noticed a communication on the above subject from this place, and signed "Farmer."

The author of said communication seems to differ with me in *toto*, in regard to the cause of the disease in question. He objects to my *reasoning** in the matter and substitutes the *opinion* of some *learned men.*

Before proceeding to answer the objections of my courteous opponent, I would beg leave to correct one mistake that occurred in my first communication. The word *nitrogenous* should have been *carboniferous.* The mistake was mine, not yours. I wrote the communication containing it in a hurry; and like other things done in a hurry, it was done imperfectly. My mind was filled at the time with the subject, and I find I was not sufficiently careful about my words. Your readers will please excuse the error. As bad as the error was, however, it had but little to do with the import of the communication, as its object was to show that alkalies would prevent and CURE the disease of the potatoe.

After stating that the disease of the potatoe was of recent origin—by the way Mr. Editor, your hint that this was doubtful, was timely and proper, as we hear of the disease as far back at least as 1815, some thirty years ago—your correspondent, "Farmer," says "it is also well known that the soil in which potatoes grow, contains the same quantity of alkali and no less nitrogen than formerly. If a want of the alkalies, or a redundant supply of nitrogenous matter can be the only cause,† then the disease might be confined to one district alone." I may be shortsighted, Mr. Editor, but I must confess I cannot see the *rationale* of this. I cannot for the life of me, understand why "the disease might be confined to one district alone," unless that district should comprise nearly the whole earth, when the want of alkaline matter is so general.

"Farmer" lays it down as a "well known" fact, that "the soil in which potatoes grow, contains the same quantity of alkali, and no less nitrogen than formerly." Now, however much I might be disposed to differ with "Farmer" in this matter, and say that when a soil has been deprived of a portion of its alkaline matter, by taking off it large crops of hay, fodder, &c., and none, or but little has been returned to it, that it has less than it had before, I will, for the sake of making the subject clearer, omit doing so for the present. It is a "well known" fact, that all salts have a relative proportion of acids and alkalies. Therefore, notwithstanding the soil may have as much alkali now as it had formerly, still it does not follow as a matter of course, that it has now a sufficiency. The soil formerly may have had enough alkali for the acid it contained at that time, but in consequence of the farmer supplying large quantities of manure, which produce an abundant supply of carbonic acid, the soil needs a greater supply of alkaline matter than it before contained to form a salt by union with the extra quantum of carbonic acid. This is the main reason, in my opinion, that the rot in the potatoe is more general now than it was a few years ago. It has been the practice until recently, to skin the soil as closely as possible, and supply but little manure; but since 1836, "a great change has come over" agriculture, and farmers have been brought to think that they must GIVE the soil something, while they are constantly TAKING AWAY from it. They have since that time been throwing on large quantities of manure; and not supplying proper proportions of alkaline matters, they find that diseases infest their plants, such as the rust in wheat, and the rot in the potatoe.

I must plead guilty to the charge, that I

* See page 316, current vol. of Cabinet.

† I did not say, Mr. Editor, that "a redundant supply of nitrogenous matter" was the cause of the disease of the potatoe; I said that "the substance forming the cells of all plants is a compound of nitrogenous (I should have said carboniferous) matter, with one or more of the alkalies, together with silex, &c.; this has nothing to do with the cause of the disease of the potatoe, which as I said before, was owing to a want of the alkalies.

am ignorant of the fact that "potatoes contain properties capable of accumulating the alkalies." The sentence in "Farmer's" communication containing this idea, is very ambiguous to me; I do not understand it.

Again, he says "it is easy to be seen that potatoes are formed in such a peculiar way, as to reject and throw off every substance detrimental to a vigorous and healthy growth." Not so easy to be seen after all, Mr. "Farmer." If this was the case, how is it that the potatoe does not expel the "hydrogen and sulphuric acid gas," that "Farmer" seems to think is the cause of the disease? If they possess the power to reject and throw off EVERY substance detrimental to a vigorous and HEALTHY growth, how is it that they suffer the "hydrogen and sulphuric acid gas" to destroy their organism? It cannot be supposed that such destruction is one of the indicatives of a "healthy growth."

In regard to this matter of "hydrogen and sulphuric acid gas" being the cause of the disease of the potatoe, I have a few words to say. It strikes me that hydrogen cannot have anything to do with the disease, for if hydrogen be in contact with oxygen, the gas that *must be present* where decay is, they will unite and form water, and consequently the oxygen could not carry on the work of decay, and therefore the decay must stop. It seems more likely to me, after a few minutes consideration of the subject, that the presence of hydrogen, so far from causing the decay of the potatoe, would have the effect of preventing it.

Respecting the other part of the theory of the "learned men" alluded to by "Farmer," that "sulphuric acid gas," thrown to the earth by those "sudden and severe showers of rain," is the cause of the wide spread injury sustained by the potatoe; I would ask what is there, in the whole formula of chemicals, that will destroy the effect of sulphuric acid, in a more effectual manner than the very substances I propose for the prevention and cure of the rot in potatoes?

I am sorry that my communication is of so great length; I find that it requires fewer words to raise objections, than it does to answer them in a plain and explicit manner.

I should like to say more about the communication of "Farmer," particularly on the subject of the appearance of the stalks of the diseased potatoe. Their appearance justifies my idea of the cause of the rot, but I shall have to postpone it for the present.

CHEMICO.

Honesdale, Pa., June 19, 1845.

For the Farmers' Cabinet.

Bees.

MR. EDITOR,—I am induced to offer you the present communication, because having read your excellent paper of the present month, in which you present us with an article on preventing the loss of swarms in hiving bees, and another on the destruction of the bee moth,—I conclude you have not yet examined the *Patent Endless Bee-hive*, described in the Cabinet of May last year, and now exhibited in this city, at No. 169 Callowhill Street.

Having made it a visit, I confess myself entirely delighted; for it seems to contain every thing desirable in a hive. All the trouble and risk of swarming and hiving the bees, appear to be entirely got rid of, by simply making the whole family pass through the new hive placed along side; which the surplus population, finally takes possession of, and go to work. And when this is found to be so, the former avenues are opened and the new hive separated. The moth is entirely got rid of by the inclination of the bottom of the hive, on which, in common with the offal of the hive, they cannot rest.

My object is not to describe, but to draw your attention and that of your readers, to the subject. W. G.

Philadelphia, June 18, 1845.

WE have lately looked in upon the Bee establishment as above, and certainly found it nicely in operation. The Hives seem well adapted to their purpose.—ED.

Sale of E. P. Prentice's Short-horns.

AGREEABLY to previous notice, the sale of Mr. E. P. Prentice's herd of improved Short-horned cattle, took place on the 25th of last month, as advertised in the Cabinet. The day of the sale proved favourable—the occurrence of showers on the day preceding having produced a delightful purity of air, and an increased greenness and freshness of vegetation, which seemed to invest Mount Hope with more, even than its usual attractions.

A numerous and highly respectable company from this and several other States, assembled early in the day, and after spending several hours in the examination of stock, and having partaken of refreshments, which were served in a beautiful grove, the sale commenced. It was conducted in a very spirited manner, by L. F. Allen, Esq., assisted by Mr. Jones, as auctioneer. The cattle were in fine condition, and passed rapidly under the hammer. Forty-one animals were sold at prices varying from $25 to $225, and averaging $112 75 per head. The prices, in general, may be considered low, when the high cost of the original stock and the acknowledged excellence of the herd

offered, are considered; yet it should be remembered that the sale was positive, and that there was no underbidding, or buying in.

COWS.

Flora—8 years old, J. B. Nott, Guilderland,	$215
Moss Rose—8 y'rs, J. W. Wheeler, Hyde Park,	140
Catharine—6 yr's, M. Bates, N. York,	105
Snow Ball—11 years, E. H. Smith, Smithtown, L. I.	110
Melissa—8 years, W. S. Packer, Brooklyn,	120
Cora—4 years, Dr. J. McNaughton, Albany,	125
Daisy—7 years, " " "	105
Diana—6 y'rs, J. W. Bishop, Berkshire co. Mass.	155
Charlotte—5 y'rs, do. do.	190
Ada—4 y'rs, R. H. Green, Winslow, Me.	170
Appolonia—10 y'rs, J. P. Brayton, Bethlehem,	160
Louisa—5 y'rs, R. H. Green, Winslow, Me.	150
Splendor—11 y'rs, W. S. Packer, Brooklyn,	190
Jenny—4 y'rs, Edward H. Smith,	105
Aurora—10 y'rs, J. B. Nott, Guilderland,	145
Miss Smith—8 y'rs, P. W. Tuthill,	80

HEIFERS AND HEIFER CALVES.

Caty—11 months, W. S. Packer, Brooklyn,	$100
Comely—4 months, Wm. Kelly, Rhinebeck,	70
Nun—3 years, " "	110
Meg—1 year, " "	65
Nell—3 y'rs, M. Bates, N. York,	225
Betty—6 months, Wm. Kelly, Rhinebeck,	55
Rover—1 year, V. P. Douw, Albany,	70
Calf, 2 weeks, J. H. Prentice, Brooklyn,	50
Calf, 2 months, W. S. Packer,	45
Burley—1 year, V. P. Douw, Albany,	80
Peggy—3 years, J. P. Brayton, Bethlehem,	200
Peggy 2nd—4 months, V. P. Douw, Albany,	110
Ramble—1 year, W. S. Packer, Brooklyn,	75
Jilt—10 months, Wm. Kelly, Rhinebeck,	60
Calf, 1 month, J. P. Walker,	77 50

BULLS AND BULL CALVES.

Calf, 1 month, W. S. Packer, Brooklyn,	$ 40
Blaize—4 months, R. H. Green, Winslow, Me.	$55
Tyro—5 months, J. B. Nott, Guilderland,	55
Tecumseh—1 year, W. S. Packer, Brooklyn,	200
Calf, 2 weeks, J. P. Walker,	30
Calf, 1 month, W. Kelly,	75
Duke—6 months, Gen. Kimball, Newfane, Vt.	200
Calf, 3 days, J. P. Walker,	25
Timour—11 months, M. J. Hayes, Montreal,	80
Fairfax—5 years, W. S. Packer,	205
	$4,622.50

41 animals, averaging $112.75

Of the other 9 animals on the catalogue, 4 (Matilda, Sally, Judy and Esterville) were reserved by Mr. Prentice, agreeably to the terms of his advertisement; 1 (Caroline) was withdrawn for want of a bid; 1 cow (Duchess) and a calf died; another (Dora) was sick; and O'Connell, by a vote of the company, unsolicited by Mr. P., was withdrawn.—*Cultivator.*

For the Farmers' Cabinet.

The late Frost—The Wheat Crop.

Much has been said in the papers of the effects of the frost which occurred in this section of the country, on the night of the 31st ult. Perhaps it would not be uninteresting to the readers of the Cabinet to have, in a few words, a sketch of what has fallen under my own observation in this neighbourhood.

The day preceding the night on which the frost happened, was cold and rather windy, but the wind falling near night, frost was expected, and some of the more tender things in our gardens, such as beans, &c., were covered by our more careful neighbours. As was expected, there was a frost, and a heavy one; at what point the thermometer stood at sunrise, I am not certain, but believe it was about 30°; one of our neighbours, who lives on the banks of the Brandywine reported his at that temperature. The tenderer plants in the gardens, which were left uncovered, were cut down to the ground, in the low lands; beans, one of the easiest affected, suffered the most: potatoes, also in many places shared the same fate. The twigs of the locust trees and black walnuts were also observed to be killed, and the grape vines also lost their early twigs and fruit.

I mention these things to give an idea of the strength of the cold. The corn fields in the low lands, along the course of our small streams, were also severely handled,

so that in many cases the plant was cut off at the ground; but as it was out of the ground but a few inches, the corn does not now seem to have been injured further than being retarded in its growth, and occasionally a hill destroyed.

The most severe loss falls on our wheat fields. The wheat mostly grown about here is the Mediterranean, which is a very early variety. The crops were quite promising, and our farmers calculated confidently on more than an average yield, but those hopes were unexpectedly cut off. Most of our wheat was in blossom: I had walked through a fine field within a day or two of the frost, in company with one of our farmers, and we were admiring the regularity of the blossoms on the plants. The morning after the frost, he observed to me, that it was his opinion, such a night would kill the wheat. Within forty-eight hours the evident tinge of brown which showed deeply in the hollows and faded away up the hill sides, proved that his fears were well founded. The idea of a frost so late in the season injuring so hardy a plant as wheat, was new to most of us, but we had to admit the fact, since it was so plainly before us. It is evident that the action of the frost was entirely on the *blossom;* the plant itself is yet as healthy looking as ever, but no grain has formed. Such an occurrence is so unusual as to be almost unknown to farmers, and indeed most with whom I have conversed on the subject, were inclined to doubt it having ever occurred, though a few think it did happen slightly, two years ago in this neighbourhood.

The effect of trees in protecting the grain was not a little remarkable. Woodland on the north served to keep off the frost some distance beyond where the shade of the trees would be cast in the day, and in one instance a small grove of chestnuts in the bottom of a hollow, where the frost was the heaviest, completely protected the wheat for many yards, beyond the shadow of the trees. A small patch of potatoes, which ran up into some woodland, forcibly illustrated this also; under the trees the tops of the plants were untouched—further from them they were just tipped, while further portions of them were cut to the ground.

On the higher hills many escaped untouched, and those which were injured, suffered but slightly. The Mediterranean wheat was almost the only kind injured, though in some places some other varieties did not escape; the later kinds around us promise a very fine yield, having escaped by not being in blossom at the time.

Some of our farmers cut down their wheat, so fully were they convinced of the destruction of their crops. This was the case in Doe run and East Marlborough townships, and probably in other places.

As the occurrence of such a loss from such a cause, is so unusual a thing, I have thrown together a few observations occurring under my own eye, to call attention to the matter, and would request others in other places to add what may have been noticed by them, so that we may have all the facts we can on the case, for that is the only way to get at any good results from such occurrences. W.

Chester County, Sixth mo., 1845.

We have understood from different neighbourhoods, that the wheat affected by this frost was generally, though perhaps not quite exclusively, the Mediterranean. This is an early ripener: and it is possible that this circumstance, subject as we are occasionally to pretty hard frosts late in the season, may prove a serious objection to it.—Ed.

Song of the Soil.

BY J. H. R. BAYLEY.

I start the bulb of the beautiful flower,
And feed the bloom of the wild wood bower;
I rear the blade of the tender herb,
And the trunk of the stalwart oak I curb;
I force the sap of the mountain pine,
And curb the tendrils of the vine;
I robe the forest, and clothe the plain
With the ripest of fruit and the richest of grain.

The cheek of the peasant I flush with health,
And yield the sturdy yeoman wealth;
I give the spirit of commerce wings,
And prop the tottering thrones of kings.
The gorgeous palace and the humble cot
Owe every atom to me they've got—
And the prince at the banquet, and hind at his board,
Alike must depend on the fare I afford.

Man may boast of his creaturely might—
His talents in peace, and prowess in fight;
And lord it over beast and bird,
By the charm of his touch and the spell of his word;
But I am the sole and mighty source
Whence flows the tide of his boasted force—
Whatever his right, and whoever he be,
His pomp and dominion must come from ME!

I am the giver of all that's good,
And have been since the world has stood;
Where's there wealth on ocean, or beauty on land,
But sprung from the warmth of my fostering hand!
Or where the object fair and free,
That claims a being, but's traced to me?
Cherish! then cherish, ye sons of toil,
The wonderful might of the fruitful soil!

And whence, says the Christian, dost thou obtain,
This power so mighty, of which thou art vain?
Thou boastest of that, which is furnished to thee,
By Him who is Lord, both of land and of sea,
For know that the treasures which come from thy sod,
Are only thine own, as the gift of thy God.

Feed for Horses.

In the account given by Mr. Stevenson, in the Quarterly Journal of Agriculture, of his experiments respecting the feeding of farm horses, on which he received a premium of ten sovereigns from the Highland and Agricultural Society of Scotland, we find the following statements:

"As to the modes of feeding while the inquiry was going on: 1. The fodder during the winter was wheat straw. 2. During spring, bean straw; none of which was chopped or cut, as the labor was thought to counterbalance the advantage. He places hay first, as the best fodder for the horse; next, bean-straw, when well got in, but it is dangerous when given damp; next, wheat straw; then, oat-straw. The grain fed out to the horses was as follows:

"1. Three horses fed on bruised oats, (15 lbs. daily,) with 42 lbs. of Swedish turnips, also daily.

"2. Two horses fed on a mixture of bruised grain, of which two parts were oats, one part barley, and one part beans; also, Swedish turnips 42 lbs. daily.

"3. Three horses fed on the same mixture; two feeds given raw and one feed boiled—the boiled portion unbruised; also, 42 lbs. of Swedish turnips daily.

"4. Two horses more on the same mixture, all boiled, and 42 lbs. of Swedish turnips daily.

"5. Two horses fed on boiled Swedish turnips, with one feed of five lbs. of the bruised mixture daily. These horses consumed about 150 lbs. daily, each, of Swedish turnips. The ages, weight, &c., as well as results, are given in the table," (which we here omit.)

Mr. Stevenson remarks that those horses which were fed on bruised oats were evidently less energetic than the others. Two of them (Nos. 1 and 2) performed less work, were dull in the yoke, and their coats looked unhealthy. Those on raw mixed grain were the most energetic. Variety of food seems to have a beneficial effect—an opinion corroborated by the observations of Liebig and others. Those on boiled food, whether turnip or otherwise, showed a healthy glossy coat. Their perspiration did not seem more abundant than usual, with the exception, perhaps, of those fed on boiled turnips. Those on boiled turnips consumed more straw; they scarcely ever tasted water. They are also said to have had a quicker step, and performed more labor.

In regard to cost, he says the results are in favor of boiled turnips with one feed of bruised grain.—*Ellsworth's Report*, 1844.

Rare Cows in the West.

We frequently have accounts from the East of great milkers and butter cows. We can now and then produce animals here, remarkable for their productive qualities. We lately saw a cow belonging to Mr. Jacob Hoffner, of Cummingsville, of part Patton and Durham stock, (the Durham from the importation of 1817,) which goes beyond even what her promising appearance, and particularly the enormous size of her finely shaped udder, would indicate, giving, for a length of time, without pushing, or any other food than grass, thirteen and a half pounds of butter a week. Dr. Martin, of Kentucky, had a cow, now dead, which yielded, with very high keep, forty-two quarts of milk per day, for two months after calving. This cow, too, was of the Patton and Durham stock mixed. Mr. Hoffner's cow gives a very large quantity of milk within two weeks of calving. We know, too, of a cow in Newport, Kentucky, of the same breed as the two above named, which gives for six months after calving, eight gallons of milk a day.—*Western Farmer and Gardener.*

Agricultural Exhibition.

Premiums offered by the Philadelphia Society for promoting Agriculture, for the Exhibition to be held at the *Lamb Tavern*, (Thompson's,) on the Lancaster turnpike, one mile West of the Permanent Bridge, on Wednesday and Thursday, the 22nd and 23rd of October, 1845, and the trial of ploughs to take place on Friday, the 24th.

HORSES.

For the best thorough-bred stud-horse,	$10
For the next best do. do.	5
For the best stud-horse adapted to the field and road,	8
For the next best do. do.	4
For the best thorough-bred brood mare,	8
For the next best do. do.	4
For the best mare adapted to the field and road,	8
For the next best do.	4
For the best horse colt, between two and four years old,	6
For the next best do. do.	3
For the best filley or mare colt, do.	6
For the next best do. do.	3
For the best horse colt between one and two years old,	4
For the next best do. do.	2
For the best filley or mare colt, do.	4
For the next best do. do.	2

NEAT CATTLE OVER 2 YEARS OLD.

For the best Durham bull over three years old, $10
For the next best do. do. 5
For the best do. between two and three years old, 8
For the next best do. do. 4
For the best bull of Devon blood, 6
For the next best do. 3
For the best Ayrshire bull, 6
For the next best do. 3
For the best Alderney bull, 6
For the next best do. 3
For the best Durham cow over four years old, 8
For the next best do. do. 4
For the best do. between two and four years old, 8
For the next best do. do. 4
For the best Durham heifer between two and three years old, 6
For the next best do. do. 3
For the best heifer of mixed breed between two and three years old, 4
For the next best do. do. 2
For the best heifer of native breed, 4
For the next best do. 2
For the best cow of Devon blood, 6
For the next best do. 3
For the best Ayrshire cow, 6
For the next best do. 3
For the best Alderney cow, 6
For the next best do. 3
For the best cow of mixed blood, 4
For the next best do. 2
For the best cow of native breed, 4
For the next best do. 2
For the best yoke of working oxen, reference being had to their performance, 8
For the next best do. 4
For the best fat ox or steer, 6
For the next best do. do. 3
For the best fat heifer over 3 years old, 4
For the next best do. do. 2

NEAT CATTLE UNDER TWO YEARS OLD.

For the best Durham bull between one and two years old, $6
For the next best do. do. 3
For the best Devon bull, do. 4
For the next best do. do. 2
For the best Ayrshire bull, do. 4
For the next best do. do. 2
For the best Alderney bull, do. 4
For the next best do. do. 2
For the best bull calf between four months and one year old, of each of the above breeds, 2
For the best Durham heifer between one and two years old, 6
For the next best do. do. 3
For the best Devon do. do. $4
For the next best do. do. 2
For the best Ayrshire do. do. 4
For the next best do. do. do. 2
For the best Alderney do. do. 4
For the next best do. do. do. 2
For the best heifer of mixed breed, do. 4
For the next best do. do. do. 2
For the best heifer of native breed, do. 4
For the next best do. do. do. 2
For the best heifer calf of each of the above breeds, between four months and one year old, 2

SHEEP.

For the best Bakewell or Leicester buck over one year old, $4
For the next best do. do. 2
For the best do. do. under one year old, 2
For the next best do. do. 1
For the four best ewes over one year old, 4
For the four next best do. do. 2
For the four best ewe lambs between four and twelve months old, 2
For the next best do. do. 1
For the best Southdown buck over one year old, 4
For the next best do. do. 2
For the best do. under one year old, 2
For the next best do. do. 1
For the four best do. ewes over one year old, 4
For the next best do. do. 2
For the four best ewe lambs between four and twelve months old, 2
For the next best do. do. 1
For the best Merino buck over one year year old, 4
For the next best do. do. 2
For the four best do. ewes, do. 4
For the next best do. do. 2

HOGS.

For the best Berkshire boar, 4
For the next best do. do. 2
For the best Berkshire sow, 4
For the next best do. do. 2
For the best boar of other breed, 4
For the next best do. do. 2
For the best sow of any other breed, 4
For the next best do. do. 2
For the best litter of pigs of any breed not less than six in number, 4

Stock entered for these premiums cannot compete for others.

No animal that has previously taken the Society's first premium, will be allowed to compete in the same class.

Ample evidence will be required as regards the pedigree, age, and character, of all stock entered for premiums.

POULTRY.

For the best pair of fowls of improved breed, $2
For the next best do. do. 1
For the best pair of capons, 2
For the next best do. 1

AGRICULTURAL IMPLEMENTS.

For the best plough, the merits thereof to be decided by trial, $10
For the next best do. 5
For the best Drill Machine, 4
For the next best do. 2
For the best Straw or Hay Cutter, 4
For the next best do. 2
For the best Corn Sheller, 4
For the next best do. 2
For the best display of Agricultural Implements, 8
For the next best do. do. 4

The ploughs intended for trial, must be at the Exhibition during the whole time. Premiums will be awarded to the best ploughmen:

For the best, $5
For the next best, 3

AGRICULTURAL PRODUCE.

For the best 5 lbs. of fresh butter, a silver butter knife, value, $5
For the next best do. 3
For the best firkin or jar of salted or preserved butter, not less than 20 lbs., a silver butter knife, value, 5
For the next best do. 3
For the best sample bushel of wheat, 3
For the next best do. do. 1
For the best do. do. rye, 2
For the next best do. do. 1
For the best do. do. of corn in ears, 2
For the next best do. do. 1
For the best do. do. of oats, 2
For the next best do. do. 1
For the best do. do. of potatoes, 2
For the next best do. do. 1
For the best display of Agricultural produce generally, 4
For the next best do. do. 2

A statement of the mode and manner of making and preserving the different kinds of butter, will be required of competitors. The preserved or salted butter must have been put up at least two months previous to the Exhibition.

A PLOUGHING MATCH,

For the trial of ploughs and ploughing, will take place on Friday, the 24th of October, at 10 o'clock.

Premiums will be paid in money or Agricultural publications, as may be preferred.

The judges are authorised to withhold premiums where the object is not entitled to distinction; and where but one of a class is exhibited, they will award such premium as they think it merits. Those persons who intend bringing animals for competition, must inform the Committee of Arrangement before 10 o'clock on the first day of the Exhibition.

Competition is open to the whole Union.

All stock, &c., contributed, must remain on the ground during the two days of Exhibition.

John Lardner,
Isaac W. Roberts,
Dennis Kelly,
Owen Sheridan,
C. S. Smith,
George Blight,
John S. Haines,
Isaac Newton,
Dr. A. L. Elwyn,
Committee of Arrangement.

July 2nd, 1845.

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

Philadelphia, Seventh Month, 1845.

Calling at Dr. Brinklé's, in Chesnut street, about the middle of last month, it was a matter of no small interest to witness the skill and success with which he managed his strawberry *plantation*, in a yard perhaps barely twenty feet square. The Doctor's plants are all seedlings; and in obtaining them he is very nice and curious in his *crossings*. He has pots and boxes with considerably more than a hundred varieties; some of them both for size and flavor, equalling any strawberry we have ever seen or tasted. Others were as remarkable for their extraordinary productiveness. Of the male and female character of the strawberry plant, the Doctor has not the shadow of a doubt.

Among the various articles enumerated as making up the cargo of the fine ship Thomas P. Cope, which sailed from this port on the 25th ult. for Liverpool, we were gratified to notice wool, leather and window glass.

The following premiums will be awarded by the Pennsylvania Horticultural Society, at its stated meeting on the 19th of next month, viz:

For the best Peaches, half a peck, $3.
" " next best do. do. $2.
" " best Pears, do. $3.
" " next best do. do. $2.
" " best Plums, 2 dozens, $2.
" " next best do. do. $1.
" " best Figs, 1 dozen, $2.

The Autumnal Exhibition will be held as usual at the Museum building in Ninth street, on the 24th, 25th and 26th of Ninth month next.

The Fruits and Fruit Trees of America: *or the Culture, Propagation and Management in the Garden and Orchard, of Fruit Trees generally; with descriptions of all the finest varieties of Fruit, native and foreign, cultivated in this country.* By A. J. Downing.

Our author is already well known by his beautiful works on Landscape Gardening, and Cottage Residences: and this which has recently issued from the press of *Wiley & Putnam*, will add to his reputation as a man of skill and sound judgment, entirely disposed to be useful to the community. Every farmer and gardener should have this book. We heartily wish it could be more strongly impressed upon the minds of our readers, that there is not proper attention paid to the propagation of good fruit, that most charming of luxuries on a farm. It has been said that he who plants a tree, does something for posterity: and certainly he who leaves behind him a good fruit tree, leaves something to increase the enjoyments of those who come after him. "He who owns a rood of proper land in this country, and in the face of all the pomonal riches of the day, only raises crabs and choke pears, deserves to lose the respect of sensible men." The first object of this work is to increase the taste for the planting and cultivation of fruit trees. The second is to furnish a manual for those, who, already more or less informed upon the subject, desire some work of reference to guide them in the operations of culture, and in the selection of varieties. Apples, Pears, Peaches, Plums, Cherries, Grapes, and all our fruits common to the orchard or the garden, are treated of, and illustrated by a great number of engravings. The chapter on Grapes, spread over about forty pages, will be found particularly interesting and valuable to to many We shall always have the work for sale, as will also J. W. Moore, Chesnut street. Price $1 75.

Since our last number was issued, the new Post-office law has gone into operation. We can no longer avail ourselves of the Post-master's frank in the remitting of money. The postage, however, is much reduced: and subscribers will please continue to forward by mail, all sums which may be due from them. We would like them to pay the postage—this would be no more than fair—the amount is trifling to each individual, while the aggregate, from the large number of letters received, would be a pretty round sum to us. Let them however, remit the money—if they do not pay the postage, we know a person who will.

The Editor gladly avails himself of this opportunity to acknowledge to the Post-masters throughout the country, his obligations for their continued and uniform kindness. He has no knowledge of a single exception to this kindness, and he trusts it is properly appreciated.

A. B. Allen, of the *Agriculturist* has published his Almanac for 1846. It is adapted to the meridian of the middle States, and contains a good deal of agricultural information, in addition to the usual matters of such an annual.

A writer in the Mark Lane Express, recommends sugar as an excellent and cheap manure for turnips!

Wheat is principally gathered in our neighbourhood. We have been told of some fields in Gloucester county, N. J., that were exceedingly *smutty*. Several persons from different neighbourhoods on this side the river, have called to say that the frost on the morning of the 1st ult., seriously injured the wheat in spots in many fields. The blossom was killed—the head turned white, and would of course yield nothing. We have no recollection of such a circumstance occurring before in this vicinity. With these exceptions, the average crop is a fair one. We hear very little indeed, of either *rust* or *fly*. The drought shortened the crop of grass—many think, 50 per cent.

Our friend Sands, appears this month with his *American Farmer* in a new dress. What is new, is not always an improvement. In this case, however, we think it is decidedly so.

A communication was received here in the spring from a correspondent in Surry co., North Carolina, enclosing a few brown beans perforated by bugs; and stating that their ravages threatened seriously to interfere with the crops of that article. We have made considerable inquiry among our scientific friends, and are unable to gain any definite information about this insect. We may just state, that the bug very closely resembles our *pea-bug* in shape, colour, &c., but seems to be a trifle larger. The beans sent had mostly two and even three insects in each. If this notice should meet the eye of any one who can give us information of the habits, &c., of this apparently new comer, or suggest any mode of culture which would prevent their thus attacking the fruit, we would feel much obliged by receiving an article on the subject. We know that the bug in the pea does not prevent it from vegetating—but from the appearance of the beans forwarded, we should very much apprehend the germ was destroyed. We are not aware of beans in this section of the country having been thus attacked. Peas are rarely seen in the spring without either a bug occupying them, or the hole whence he has escaped, but no injury seems done.

Since the above paragraph was written, we have received a letter from Hunt's store, in North Carolina, which says that "by mixing salt with the garden beans as soon as they are dry enough to put away, the worms are effectually prevented from destroying them."

BOMMER'S MANURE METHOD.

Interesting communication from Mr. Bommer, relative to his well known method for making manure.

TO THE AGRICULTURAL PUBLIC.

Price of the Method greatly reduced.—Until now I have maintained the prices fixed upon by myself and Abbott & Co.; prices which varied from six to twenty-five dollars, according to the size of the farms, and this I was obliged to do, because in accordance with our agreement, I was not at liberty to alter them. It was principally to gain this end that I bought out Messrs. Abbott & Co.

To render my work really popular, I have fixed its price so low, that each member of the whole agricultural community can purchase it. Henceforth it will be sold at the uniform price of $5 for every farm in the Union—that is,

One Right with one copy of the Method for any one Farm, $5 00.

PRICE FOR WHOLESALE.—Agents, farmer clubs, book-stores, seed-stores, agricultural repositories, offices of agricultural papers; in one word, such persons as will take a certain number of "Methods" at a time, either to be divided among their neighbours who have clubbed together, or for single sales at the price of five dollars, will have the 'methods" for the following prices, viz.

For 5 Rights with 5 Methods or books,.... $20
" 12 " 12 " 40
" 30 or more " 30 or more " 40 per cent.
(Making only $3 per piece.)

All orders must be accompanied by the amount in *cash*, and directed to my office, 113 Greenwich st. New York city, or to my empowered Agents; in which case the "Methods" will be sent immediately.

Each package of "Methods" will contain a good number of Prospectuses or handbills, containing 1st. A Synopsis of the matter contained in the "Method;" 2d. Documents and Reports from several authorities of the United States, approving the "Method" and acknowledging its practicability; 3d. Certificates from respectable, scientific and practical men, attesting the results which have been obtained from its application; 4th. Editorial articles, expressing the opinion of the press.

A word to Enterprising Men.

Having succeeded in making known the advantages and the practical utility of my method to competent and disinterested men, whose characters are sufficiently known to the public to place their testimony beyond doubt; my "method" being patronised by the most eminent men of this country, Messrs Martin Van Buren, Gov. J. H. Hammond, Gen. Wade Hampton, Gen. J. L. Means, Col. Singleton, Col. Hugh Lawson, Hon. J. R. Poinsett, W. B. Seabrook, Andrew Stevenson and others, who have adopted it; several thousands of the method having already been spread throughout the Union, the greater part of the purchasers being eminent agriculturists; and all subscribers being satisfied with the work, my end has been attained, my task stops here; it is now a mere business matter, ready to receive the developments of which it is susceptible.

For these reasons, and desiring to employ my time in new researches and experiments, especially upon the subject of *transmutation* of dead into living vegetables, a highly important subject in agriculture, already hinted at in my work, but which is still in a problematical state, not reposing upon any solid basis; and to enable me also, in accordance with my former promises, to impart the results of those experiments to the subscribers of my method, I have resolved to cede my patent and method, either by Town, County, or by State, to single persons or to companies, on the most reasonable terms, the price of which will be fixed according to the agricultural importance of the Towns, Counties, or States.

Every purchaser of the patent for a Town, County, or State, will be supplied with such number of copies of the method, gratis, as may be agreed on.

NOTE.—The patent right *for* the State of New-York, (Long Island and Staten Island excepted;) *for* the ten eastern counties of New Jersey; *for* Frederic county, Maryland; and *for* about 40 towns in New England, have been ceded by me to several persons and companies. For all other states and territories in the Union, I can now dispose of the patent and method.

Herein I present a new branch of industry to enterprising, intelligent, and active men. It would be superfluous to enlarge upon its advantages, for it will be seen at a glance, by perusing documents, mentioned in the prospectuses, that my method enjoys a high reputation in the Union, and that this enterprise is in its nature as honorable as it is lucrative.

Important Notice.

Having now given the best plan, taken the best measures for the prompt introduction of my "method" into agriculture, and done every thing, on my part, to enable every one to procure it at small expense, I notify those who should feel tempted to use this system, without being furnished with a right and a "method," that they will not only expose themselves to be prosecuted for an infringment of the patent, but lose their time and their money in vain trials, of which the result will be, if not totally unprofitable, at least very incomplete. Therefore, do not deceive yourselves, but be assured *of this truth*, that my large method is to this day, the sole work in existence which contains the improved and complete system, and in which its application is rendered easy and profitable in all its branches. In a word, its possession is the main condition of your success; first, because the whole work constitutes one chain of facts and principles, which are linked together and sustain each other, and form an inseparable whole which is indispensable to the proper comprehension of the system, enabling you to apply it in a really profitable manner. Secondly, because it contains, besides the process in question, a great number of other instructions not less useful, the knowledge of which will aid and guide you, so as to put you in a way to derive from the system the greatest advantages and profits.

For these reasons, those who have formerly bought my small method, can have the large one *gratis*, by an application at my office, (post paid,) or to my agents.

Those among you, who have faithfully tested the method and obtained satisfactory results, are respectfully requested to communicate with me. To those who have not tested its advantages, I recommend, by all means, carefully to conform to the instructions contained in the large method, in which case their success will be infallible.

Statements and Explanations concerning the "Method," and the Rights attached to it.

When I first introduced this method into American agriculture, I judged it prudent, for many reasons, to publish at first but a part of it; enough, however, to enable the intelligent farmer to succeed in the experiment. Before encountering the expense required to publish in *full* the fruits of my labors, I was anxious to ascertain if this system would be well received and properly appreciated by the agricultural public. My expectations were not disappointed, that trial having been crowned with entire success. Thus encouraged, it became my duty to persevere, and to give you the result of all my researches and experiments. This you will find in my

new work, which I can say with confidence, is the key with which you can, by the exercise of a little intelligence and industry, double the product of your farms; for, in this work, the system is so much improved, its application rendered so easy, the whole so clearly explained, and so fully detailed, that if you conform to its prescriptions and instructions with scrupulous exactness, *success is certain.*

In the main, my method is based upon that known for some time in France as Jauffret's system; that is to say, I use the same materials; for, in my researches and experiments it became my duty to consult not only the small French pamphlet of Jauffret, but all other writings which have appeared upon the subject of agriculture, and especially of manure, in order to extract from them whatever, by experiment, should prove to be good, valuable, and useful to the object I had in view. The merit of this new system does not consist either in the materials, or in their combination. These materials have been known for ages as possessing fertilizing qualities, and every person at all acquainted with chemistry, knows that in mixing alkalies with animal matter, a mordant can be obtained which will produce fermentation in a heap of vegetables. This then, is not new; it is the numerous improvements and ameliorations connected with the application of these materials which give real importance to this new system. Therein lies the real progress of the art in the preparation and the application of manures, and therein consists the merit of the new edition of the *method.* True, Jauffret also undertook the application of this mixture, but he stopped half way. His process, such as described in his pamphlet, cannot be used with profit and success, and that for three cogent reasons. The first is: the meagre and incomplete instructions he gives to the operator upon the application of the system; the second, because the hand labor is too painful and expensive; and the third, because he did not discover, and consequently could not tell how to employ the air as a second agent of fermentation—a very important point in the operation, because without this aid, it is impossible to attain that degree of heat which is necessary perfectly to reduce vegetable matter into manure in a short time. Therein he failed, and therefore it remained for others to accomplish the work he had left incomplete. But although I have perhaps gone much farther than all others who have hitherto devoted their attention to this subject, I do not pretend to have closed the door to improvement by my method. The question of manure is so extensive that it embraces nearly the whole agricultural art, and will in due time advance to fullness by relying upon science and practice. In the meanwhile the great step is made, the fundamental bases are established, and the system, as explained in my new work, has been so well matured by my experiments, that I can affirm without fear of misleading any one, that any farmer, who will undertake to operate on my plan, will succeed, and I assure him that he will considerably augment the products of his farm by following my economical process in the preparation and application of his manure. Here the word "*economical*" is seriously intended. The system taken altogether is essentially economical; for except a small quantity of lime, all the ingredients which enter into the composition of the caustic lye, (which, with the air, form the two agents of fermentation,) are found upon all farms, and cost nothing but the labor of gathering them.

Concerning the patent attached to my method, it is evident that it could only be granted for the improvement connected with the application of materials already known. You should know then, that the patented process is of the greatest advantage to the farmer, being the most economical, and the most easily reduced into practice. It is also the process now in use in every section of the Union. You should also understand, that in the patent this process is only described in general terms, and that, isolated from the "method," it is not likely to be of any value. To apply it with success, it is necessary to have my work for a guide.

According to an agreement between myself and my agents, Messrs. Baer and Gouliart, the patent was issued under their name, and a part of it, comprising the right for the northern and eastern States, was immediately ceded to me by them, which transfer is duly recorded in the patent office, in Liber M. page 280 of transfers of patent rights. Then by a second transfer, made to me the 6th Nov. 1844, by Abbott, Baer and Gouliart, known as the firm of Abbott & Co., the remaining part, comprising the right in the southern and western States, has also been ceded to me, which transfer is also recorded in the patent office, in Liber S, page 373; so that by virtue of these two acts, the patent, issued under the above names, now belongs entirely to me.

With regard to the "method" itself, that is to say, the book which contains the directions and instructions indispensible to the farmer who wishes to apply the process; in a word, which contains the system complete in all its details, the property and the copyright appertain to myself exclusively, according to two legal acts entered in the clerk's office of the southern dictrict of New York. Thus, these two rights, although distinct, are inseparable; that is, the patent cannot be profitable to any one without the method.

I was compelled to give these explanations and to make these statements, because all these matters have been agitated by the press as well as by private correspondence; and also, that for the future, each one may know to whom to apply in regard to this patent and method.

You should not lose sight of the fact that all the copies of the method are *signed and sealed* with my own hand,—a measure I have adopted to prevent imposition and fraud.

A call to the Press.

☞ Editors of agricultural periodicals, and of other papers having at least 400 farmer subscribers, are invited to publish the above communication; for which entire insertion, and perhaps some other articles to be sent by me afterwards, I offer every one three copies of the method; to be delivered to him immediately after the receipt of his paper containing the whole article. Such editors of agricultural papers of which I am not yet a subscriber, will please to send me their paper, and consider me as such. GEO. BOMMER.

Office 113 Greenwich street, New York city.

July 1st, 1845.

PHILADELPHIA AGRICULTURAL, HORTICULTURAL, AND SEED WAREHOUSE.

No. 194½ Market street, between Fifth and Sixth streets, South side.

For sale as above, Prouty & Mears' Patent Centre Draught Self-sharpening Ploughs, with all the new improvements attached. These ploughs have taken nine premiums the last fall, in the States of Pennsylvania and Delaware. Subsoil ploughs for one or two horses—Taylor's new Patent Straw-cutters—Guillotine Improved do.—Corn-Planters—Cultivators—Harrows; Turnip-Drills, &c. Garden tools of every description. Also, *Vegetable* and *Flower seeds*, crop of 1844, grown for this establishment, and warranted true to name. Among the collection are several new kinds, very superior—as Seymour's White Giant Celery—Union Head Lettuce. Also, Peas—Beans—Potatoes, &c.—Fruit-trees—Bulbous roots, &c., for sale at the lowest prices, by D. O. PROUTY.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMERS' CABINET, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, $1 75 per barrel, containing four bushels—$5 for three barrels—$15 for ten barrels, or thirty cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. It is now seasonable for turnips, &c.

JOSIAH TATUM.

WATER MELONS from the South were in our market on the 25th ult. Tomatoes we had some time previously.

DR. GEIB, of this city, showed us a fortnight ago, a simple, yet ingenious machine, which he calls the CHIROGRAPHAST, designed to assist young beginners in acquiring the art of *properly holding the pen*. The youngsters, we should suppose, would thank the Doctor. Some of us who recollect the raps our unlucky knuckles were in the habit of receiving half a century ago, and which after all, only taught us to scratch unsightly marks, ourselves can but just decipher, can appreciate the benefit to be conferred by an instrument of this kind upon the uninitiated.

Agency for the Purchase & Sale of IMPROVED BREEDS OF CATTLE & SHEEP.

THE subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay. AARON CLEMENT.

March 15*th*, 1845.

Chester County Farm for Sale.

THE subscriber offers for sale the valuable farm on which he has resided for a number of years past, situated on the Brandywine, two and a half miles from the borough of Westchester, and about twenty-five miles from Philadelphia. It comprises 136 acres of naturally fertile and highly improved land, and equal to any of that which has made this vicinity so celebrated as a grazing district. It has been well limed, fenced and drained, and every field contains a spring or run of water for the stock. The buildings are large, with every convenience attached. The mansion is of modern finish, five rooms on the first floor, with entry running through the middle. The spring water is introduced by iron pipes into the kitchen and bath room in the second story, and also flows into the barn-yard. The grounds around are handsomely laid out with fruit and shade trees and shrubbery. There is an orchard in prime bearing, and a young one of Apple, Pear and Peach trees, is just coming into productiveness. The barn is double floored, with straw house, granaries, wagon house, and shedding attached.

This property presents the advantages seldom met with, of combining a beautiful country seat with that of a highly fertile and productive farm. Application to be made to the subscriber, residing thereon, or to Anthony P. Morris, No. 23 Filbert street, Philadelphia.

PASCHALL MORRIS.

Allerton Farm, near West Chester, Chester co., Pa., Sixth month 14th, 1845. 2t.

SOME farmers were cutting their wheat in Salem and Burlington counties, N. J., on the 18th ult. The harvest was no doubt hastened by the long continued drought. The editor recollects beginning to cut his rye on the 24th of Sixth month, in 1826. This was the earliest he ever commenced harvesting.

WILLIAM PARRY, of Burlington co., N. J., left at this office two or three weeks ago, a couple of stalks of wheat, with remarkably large and well filled heads. They were a part of the produce of a single head of 21 grains, which was sent him from the seat of government, by his uncle O. H. Smith, of the U. S. Senate, from Indiana, and which came from Italy with Greenough's statue of General Washington. He planted those grains on the 19th of First month, 1842, and has been nursing their increase ever since. Last year he had three bushels lacking one quart, on one-twelfth of an acre. This season he will probably have 50 or 60 bushels. He stated that some of it would be for sale at J. P. H. Coates' Seed store, in Market street. It is a white bearded variety, and our friend proposed calling it the WASHINGTON wheat. A few stalks of this wheat were left by S. L. Clement at the room of our Agricultural Society, at its meeting on the 2nd inst.

☞ SHORT ADVERTISEMENTS, ☜

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	$4 00
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	60
Complete sets of the FARMERS' CABINET, half-bound, 8 vols.	6 50
DOWNING'S Landscape Gardening,	3 50
Downing's Fruits and Fruit Trees of America,	1 75
SKINNER'S Every Man his own Farrier,	50
AMERICAN Poulterer's Companion.	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
BEVAN on the HONEY BEE,	31½
BUISTS' ROSE MANUAL,	75
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions received for Colman's Agricultural Tour—or single numbers sold.

☞ We are prepared to bind books to order.

Seed Store,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red clover, and other grass seeds. Field seeds, consisting of Spring and Winter Wheats, Potatoe, Oats, Barley, and choice varieties of Seed-corn. Also in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guano in parcels to suit purchasers.

M. S. POWELL.

Philad., March 15th. tf.

COATES' SEED STORE,

No. 49 Market Street.

FRESH TURNIP SEED,

Of the most approved varieties for Cattle and Table use, with a complete Assortment of

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties—Bird Seeds, &c. JOS. P. H. COATES,

Successor to George M. Coates.

The second number of the *American Journal of Agriculture*, edited by Drs. Emmons and Prime, and published at Albany, was received some time ago. It contains much valuable matter, and we will with pleasure receive subscriptions for it at this office.—$3 per annum.

The quantity of rain which fell during the Sixth month, 1845, was nearly three and three-quarter inches. ..... 3.72 inches.

Penn. Hospital, 7th mo. 1st.

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It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

Terms.—One dollar per annum, or five dollars for seven copies—*payable in advance.*

All subscriptions must commence at the *beginning* of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For six dollars paid in advance, a *complete set* of the work will be furnished in numbers, including the ninth volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly *half-bound and lettered.* Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage. To any Post office within thirty miles of Philadelphia, they will go free of charge.

Joseph Rakestraw, Printer.